Claims

1. A transmitter (4) for a controlled-shape switched signal on a communication line (1) comprising signal generator means including capacitor means (19) and signal producing means (9) responsive to a capacitor voltage (V_O) across said capacitor means (19) for applying said switched signal to said line, and charging means (24, 25) responsive to an input signal (TX) for supplying a charging current (I_c) to said capacitor means (19) so as to define an edge of said switched signal,

   characterised in that said charging means (24, 25) comprises feedback loop means responsive to said capacitor voltage (V_O) for generating a feedback current (I_E) having a continuous magnitude that is a progressive function of said capacitor voltage, said charging current (I_c) being a function of said feedback current (I_E) so that the rate of change of said capacitor voltage (V_O) is a continuous function of time.

2. A transmitter as claimed in claim 1, wherein said feedback loop means comprises first and second feedback loop elements (26, 27) for generating first and second feedback voltages (V_H, V_L) whose magnitudes are respective functions of said capacitor voltage (V_O) and selection means (23) for generating said feedback current (I_E) first as a function of a selected one of said first and second feedback voltages (V_H, V_L) and subsequently as a function of the other of said feedback voltages.

3. A transmitter as claimed in claim 2, wherein one of said first and second feedback voltages (V_H, V_L) is a rising function of said capacitor voltage (V_O) and the other is a falling function of said capacitor voltage, so that the rate of change of said feedback current (I_E) increases with time while said one of said first and second feedback voltages is selected and decreases with time while said other of said first and second feedback voltages is selected.

4. A transmitter as claimed in claim 2 or 3, wherein said feedback loop means comprises clamp means (22, 34) for maintaining said feedback current (I_E) at a limit value such that said charging current and said capacitor voltage vary

substantially as linear functions of time for a part (41, 43, 45) of said edge of said switched signal.

5. A transmitter as claimed in any of claims 2 to 4, wherein said selection means (23) is responsive to the relative magnitudes of said first and second feedback voltages (V_H, V_L) to select one of said first and second feedback voltages.

6. A transmitter as claimed in any preceding claim, wherein said rate of change of said feedback current (I_E) is arranged to be a function of said capacitor voltage (V_O) such that said capacitor voltage varies substantially as an exponential function of time, at least for a part (40, 42, 44, 46) of said edge of said switched signal.

7. A transmitter as claimed in any preceding claim, wherein said charging means (24, 25) is selectively responsive to said input signal (TX) for supplying a positive or a negative charging current (I_c) to said capacitor means (19), whereby to generate a rising edge or a falling edge of said switched signal.

8. A transmitter as claimed in any preceding claim, wherein said charging means (24, 25) comprises resistive means (R; R_1, R_2) for receiving a voltage that is a function of said capacitor voltage for generating said feedback current.

9. A transmitter as claimed in claim 8, wherein said charging means (24, 25) comprises means (46, 47) for modifying said resistive means (R_1, R_2) so as to modify the rates of change of said feedback current (I_E) and said charging current (I_c).

10. A transmitter as claimed in any preceding claim, wherein said capacitor voltage (V_O) varies substantially as a sinusoidal half-cycle having a single frequency to define said edge of said switched signal.